STATE OF ALASKA

THE REGULATORY COMMISSION OF ALASKA

Before Commissioners: Robert M. Pickett, Chairman
Kate Giard
Mark K. Johnson
Anthony A. Price
Janis W. Wilson

In the Matter of the Consideration of the Adoption of Regulations to Implement Amendments to the Public Utilities Regulatory Policies Act of 1978 by the Energy Policy Act of 2005	R-06-5 ORDER NO. 8
In the Matter of the Consideration of the Adoption of Regulations Implementing Net Metering	R-09-1 ORDER NO. 1
In the Matter of the Consideration of the Adoption of Regulations Implementing an Interconnection Standard	R-09-2 ORDER NO. 1

ORDER CLOSING DOCKET, OPENING DOCKETS, SUBSUMING APPLICABLE PORTIONS OF DOCKET R-06-5 RECORD INTO DOCKETS R-09-1 AND R-09-2, SCHEDULING TECHNICAL CONFERENCES, AND REQUIRING FILINGS

BY THE COMMISSION:

Summary

We close Docket R-06-5, the docket opened to consider federal PURPA[1] standards adopted by the Energy Policy Act of 2005 (EPAct). We open Dockets R-09-1 and R-09-2 to consider net metering standards and Alaska-specific and interconnection

[1]Public Utilities Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (1978). PURPA was enacted in response to our country's energy crisis, designed to reduce our country's dependence on foreign oil, promote alternative energy sources and energy efficiency, and diversify the electric power industry.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

standards respectively, and subsume applicable portions of the record developed in Docket R-06-5 into Dockets R-09-1 and R-09-2. We schedule technical conferences to solicit input on the Alaska-specific interconnection and net metering standards, and propose certain elements of interconnection and net metering standards as a means of generating discussion at these technical conferences.

Background

In Docket R-06-5 we considered five new federal standards (net metering, fuel diversity, fossil fuel generation efficiency, time-based (smart) metering, and interconnection) intended to encourage development of small and alternative energy sources and promote efficiency in the generation and distribution of electrical power.[2] Due to staggered federal timelines for state consideration of these standards,[3] we bifurcated the proceeding into two tracks.[4] Track A focused on the federal smart metering and interconnection standards, while Track B focused on the federal net metering, fuel diversity, and fossil fuel generation efficiency standards.

[2]The 2005 EPAct amended PURPA section 111(d) by adding five new federal standards - net metering, fuel diversity, fossil fuel generation efficiency, time-based (smart) metering, and interconnection. *See* PURPA Sections 111(d)(11)-(16) (16 U.S.C. § 2621(d)(11)-(16)). The EPAct required state regulatory authorities to consider adopting each of the five new standards. *See* PURPA Sections 111(d)(14)(F); 112(b)(3)(A), (4)(A), (5)(A) (16 U.S.C. §§ 2621(d)(14)(F); 2622(b)(3)(A), (4)(A), (5)(A)), as amended by the EPAct.

[3]The deadline for a final determination regarding adopting federal time-based metering and interconnection standards was August 8, 2007 (Sections 111(d)(14)(F); 112(b)(4)(B), (b)(5)(B) (16 U.S.C. §§ 2621(d)(14(F); 2622(b)(4)(B), (5)(B)), while the deadline for a final determination on adopting federal net metering, fuel diversity, and fossil fuel generation efficiency standards was August 8, 2008 (*see* Section 112(b)(3)(B) (16 U.S.C. §§ 2622(b)(3)(B)).

[4]*See* Order R-06-5(2), dated April 4, 2007.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

After soliciting initial comments on the PURPA standards adopted by the EPAct,[5] we held separate workshops on and staggered comment cycles for the Track A and Track B standards.[6] We discussed the results of these workshops and comments filed in Docket R-06-5 at several public meetings. We completed Track A by declining to implement federal smart metering and interconnection standards proposed by the EPAct, but agreed to pursue an Alaska-specific interconnection standard in a separate rulemaking proceeding.[7] We completed Track B by declining to adopt federal net metering, fuel diversity, and fossil fuel generation efficiency standards, but committed to opening a regulations docket to consider a net metering requirement differing from the federal standard.[8]

Discussion

At our October 22, 2008 public meeting, we voted to open separate dockets to consider regulations implementing a net metering requirement and an interconnection standard.[9] We also agreed to propose certain elements of both a net metering requirement and an interconnection standard as a means of generating discussion among interested entities, and to schedule technical conferences to discuss the net metering requirement and interconnection standard. This order states the

[5] *See* Order R-06-5(1), dated August 29, 2006.

[6] *See* Order R-06-5(2) (scheduling workshop on smart metering and interconnection); Order R-06-5(3), dated June 8, 2007 (inviting comment on smart metering and interconnection); Order R-06-5(5), dated April 16, 2008 (scheduling separate workshops on net metering, fuel source diversification, and fossil fuel efficiency); Order R-06-5(6), dated June 26, 2008 (inviting comments on net metering, fuel source diversification, and fossil fuel efficiency).

[7] *See* Order R-06-5(4), dated August 8, 2007.

[8] *See* Order R-06-5(7), dated August 27, 2008.

[9] October 22, 2008 public meeting transcript at 34-39.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

proposed elements for the net metering requirement and interconnection standard, and schedules technical conferences to discuss these proposals.

Net Metering Requirement

We declined to adopt the federal net metering standard in Docket R-06-5,[10] noting the confining and undefined nature of that federal standard.[11] We committed to pursuing a net metering standard that did not include these inherent limitations, with a stated intent of developing a more comprehensive net metering standard.[12] We also noted that net metering is dependent upon the consumer-producer's ability to interconnect to the serving utility's facilities, and agreed to simultaneously pursue an interconnection standard.[13]

We open Docket R-09-1 to consider adopting regulations implementing a net metering standard. We received extensive comments and conducted a workshop regarding net metering In Docket R-06-5,[14] and subsume the Docket R-06-5 record on net metering into Docket R-09-1.[15] Our goal in this proceeding is to create an Alaskan

---

[10]The federal net metering standard provides:

> Each electric utility shall make available upon request net metering service to any electric consumer that the electric utility serves. For purposes of this paragraph, the term 'net metering service' means service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.

PURPA Section 111(d)(11) (16 U.S.C. § 2621(d)(11)).

[11]Order R-06-5(7) at 11-13.

[12]*Id.*

[13]*Id.*

[14]The net metering workshop convened on April 29, 2008.

[15]To review the portions of Docket R-06-5 that have been subsumed into Docket R-09-1, go to http://rca.alaska.gov/RCAWeb/home.aspx. Under *Top Searches*, enter Docket R-09-001 into the *Find a Matter* box.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

rule that will encourage the development of distributed small-scale renewable generation, while maintaining utility system integrity and fairly apportioning costs among consumers and consumer/producers.

Net Metering Definition

In its simplest form, net metering employs a single standard electrical meter to record the flow of energy back and forth between a home generator and the utility's power grid. Customer-generated electricity is used as an offset to reduce the customer's load requirement. When the consumer produces more power than he or she consumes, electricity flows out through the meter and into in the power grid. In this regard the power grid acts as a battery for the generating customer, allowing the customer to store excess generation on the power grid until needed to meet load requirements. The amount of customer-generated power is compared to the customer's consumption for the applicable accounting period, and the customer is billed for net electric consumption. When the consumer generates more electricity than he or she uses in an accounting period, the electric utility may be required to purchase the excess generation from the consumer or the excess generation may be banked for future use by the generating customer.

As noted in Order R-06-5(7), the federal net metering standard failed to define several elements of a net metering standard. A comprehensive net metering standard implicates several policy determinations, ranging from pricing of customer-generated electricity to restrictions on participation in net metering. Necessary considerations regarding a net metering standard include:

- *Net metering pricing:* Where energy generated by a customer is used to offset the customer's load requirement, what level of retail credit should be provided? Should net metering customers receive an offset equivalent to the serving utility's retail rate or an offset based on an avoided cost methodology?

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

- *Treatment of excess generation/pricing of excess generation*: Should the utility be required to purchase net excess power generated by the customer, and if so, should the utility pay its retail rate or an avoided cost rate for the net excess generation?
- *Net metering accounting period*: Should the accounting period for comparing generation to usage be monthly, annually, or some other periodic time frame?[16]
- *Generation system size limitation*: Should there be a limit on the size of the customer's electric generation facility, and if so, what is the proper size limit?
- *Overall system/customer participation limitation*: Should there be a limit on the number of customers that may request net metering service from utility (thereby minimizing the impact on utility revenues), and if so, what is the appropriate customer limit?
- *Fuel sources*: Should there be a limit on fuel types allowed as sources for net energy production, and if so, what fuel types should be allowed?

Net Metering Proposal

Agency staff developed a "straw man" proposal suggesting rules on each of the above elements of a net metering standard. As previously noted, this proposal is intended as a means of generating discussion among interested entities. The staff proposal requires a utility to apply electricity produced by a customer to meet the

[16]Generating customers use the utility grid like a battery by storing unused generation on the grid, and receive a credit (applied on a kWh per kWh basis) when they require power from the grid. The availability and quality of generation sources (e.g., wind, sun, water) varies over time, and the accounting period impacts a generating customer's ability to take advantage of the cyclical nature of such generation sources.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

customer's load requirement, and requires the utility to purchase the net metering customer's excess generation. Specific components of this proposal are:

- *Net metering pricing:* Net metering customers should receive a retail credit equivalent to the serving utility's retail rate for generation used to offset customer's load requirement.
- *Treatment of excess generation/pricing of excess generation*: The serving utility should be required to purchase net excess power generated by a customer at the utility's avoided cost.
- *Net metering accounting period*: The net metering accounting period should be monthly.
- *Generation system size limitation*: There should be a cap on the size of net metering generators at 25 kilowatts of generation.
- *Overall system/customer participation limitation*: There should be a participation limit based on system load, with utilities required to allow net metering on a first come, first served basis until the cumulative generating capacity of all net metering systems on the utility's lines equals one percent of the company's peak demand.
- *Fuel sources*: The following fuels sources should be allowed for any net metering standard adopted by this agency - solar thermal,[17] photovoltaic,[18]

[17]Solar thermal is a technology for harnessing solar energy for thermal energy (heat).

[18]Photovoltaic energy is the conversion of sunlight into electricity through a photovoltaic (PVs) cell, a nonmechanical device usually made from silicon alloys.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

- wind, biomass,[19] hydroelectric,[20] geothermal,[21] wave,[22] tidal,[23] ocean thermal,[24] landfill gas,[25] and anaerobic digestion.[26]

One additional element of staff's proposal is that customers should not be allowed to concurrently participate in net metering and Sustainable Natural Alternative Energy (SNAP) programs. SNAP programs allow customers to install green energy power systems and connect to the utility's grid, with customer-producers being paid from voluntary contributions from members of the utility.[27]

---

[19]Biomass is plant matter such as trees, grasses, agricultural crops or other biological material.

[20]Hydroelectricity is electricity generated by hydropower, the production of power through the use of the gravitational force of falling or flowing water.

[21]Geothermal power is energy generated from heat stored in the earth, or the collection of absorbed heat derived from underground.

[22]Wave power is the transport of energy by ocean surface waves, and the capture of that energy for electricity generation.

[23]Tidal energy is a form of hydropower that converts the energy of tides into electricity.

[24]Ocean thermal energy conversion is an energy technology that converts solar radiation to electric power by using the temperature difference between deep and shallow water.

[25]Landfills produce gas that can be used to generate electricity, and landfill gas is collected by drilling "wells" into the landfills, and collecting the gases through pipes. Landfill gas is a form of biogas produced by the biological breakdown of organic matter in the absence of oxygen.

[26]Anaerobic digestion is a biological process in which biodegradable organic matters are broken-down by bacteria into biogas, which consists of methane, carbon dioxide, and other trace amount of gases. The biogas can be used to generate heat and electricity. One means of inducing anaerobic digestion is through the use of a cover lagoon, an earthen lagoon fitted with a floating impermeable cover that collects biogas as it is produced from the organic wastes.

[27]Alaskan utilities that have implemented a SNAP program are Golden Valley Electric Association, Inc. and Homer Electric Association, Inc.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

Interconnection Standard

We declined to adopt the specific interconnection standard proposed by the 2005 EPAct,[28] which requires that interconnection services be offered based on standards developed by the Institute of Electrical and Electronics Engineers: IEEE Standard 1547 for Interconnecting Distributed Resources with Electric Power Systems (IEEE Standard 1547).[29] We committed to crafting an interconnection policy suited to Alaska energy needs, recognizing that certain aspects of the IEEE Standard 1547 may not be applicable to Alaska given the isolation of our grid and the smaller size of our electrical utilities.[30] We held a workshop to discuss an Alaska-specific interconnection standard,[31] and received a report from workshop participants.

We open Docket R-09-2 to consider adopting regulations implementing an interconnection standard. We received comments and conducted a workshop regarding interconnection standards In Docket R-06-5, and subsume the Docket R-06-5 record on interconnection standards into Docket R-09-2.[32] Our goal in this docket is to create an interconnection standard that recognizes Alaskan conditions, provides uniformity in interconnection requirements of Alaskan electrical utilities, and simplifies the interconnection process for small distributed resources.

[28] *See* Order R-06-5(4).

[29] The purpose of IEEE Standard 1547 is to provide a voluntary model for connecting customer distributing generators and related equipment to the electrical grid.

[30] Order R-06-5(4) at 6.

[31] That workshop convened on September 19, 2007.

[32] To review the portions of Docket R-06-5 that have been subsumed into Docket R-09-2, go to http://rca.alaska.gov/RCAWeb/home.aspx. Under *Top Searches*, enter Docket R-09-002 into the *Find a Matter* box.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

Interconnection Definition

Interconnection service requires a utility to allow an electric consumer to connect an on-site generation facility to the local electric distribution facilities. Interconnection standards are necessary to ensure that the addition of consumer-generation to an electric utility's system will not have negative impacts on safety, power quality, or reliability.

Interconnection Proposal

For the purposes of generating discussion at the upcoming technical conference, we request that technical conference attendees be prepared to discuss the current IEEE 1547 standard.[33] Specifically, technical conference attendees should be prepared to:

- identify specific areas in IEEE 1547 which are not appropriate in Alaska or may need to be modified to meet unique Alaskan conditions;
- identify any issues not contained within IEEE 1547 that should be included in an interconnection rule and suggest specific language; and
- comment on which utilities should be subject to interconnection regulations.

Scheduling Technical Conferences

We schedule two technical conferences to discuss appropriate net metering requirements and interconnection standards. We will convene a technical conference in Docket R-09-1 at 9:30 a.m. on March 4, 2009, to facilitate a discussion of the appropriate elements of a net metering standard. A technical conference to discuss appropriate interconnection standards will convene in Docket R-09-2 at 9:30 a.m. on March 18, 2009. We require any interested person participating at either or both technical conferences to file a notice of intent to participate by the deadlines stated in

[33] *IEEE Standard 1547, IEEE Standard for Interconnection Distributed Resources with Electric Power Systems*, approved June 12, 2003, published July 28, 2003.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

Ordering Paragraph No. 2.[34] Conference attendees should be prepared to discuss each element of the staff proposal outlined above.

We ask workshop participants to file a joint status report on their efforts and conclusions following each of the technical conferences. We prefer that a joint report be filed after each technical conference. If participants are unable to reach agreement, we will accept reports or draft regulations from individual participants or from groups of participants with similar positions. Reports must contain specific reasons a particular position is taken rather than conclusory statements.

ORDER

THE COMMISSION FURTHER ORDERS:

1. Technical conferences[35] are scheduled to convene at the Commission's East Hearing Room, Suite 300, 701 West Eighth Avenue, Anchorage, Alaska, at the times and for the purposes specified below:

a. at 9:30 a.m. on March 4, 2009, to discuss a net metering standard in Docket R-09-1; and

b. at 9:30 a.m. on March 18, 2009, to discuss appropriate an interconnection standard in Docket R-09-2.

[34]Procedures for submitting notices of participation are specified at footnote 36.

[35]If you are a person with a disability who may need a special accommodation, auxiliary aid, or service or alternative communication format in order to participate in the scheduled event, please contact Joyce McGowan at 1-907-276-6222, toll free at 1-800-390-2782, or TTY at 1-907-276-4533, or send your request by electronic mail to rca.mail@alaska.gov at least three days before the technical conference, to make any necessary arrangements.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533

2. Interested persons planning to participate in one or more of the technical conferences specified in Ordering Paragraph No. 1 must file a notice of intent to participate[36] for each technical conference by the following deadlines:

a. by 4 p.m., February 27, 2009, for the net metering technical conference in Docket R-09-1; and

b. by 4 p.m., March 13, 2009, for the interconnection technical conference in Docket R-09-2.

3. Participants in each technical conference specified in Ordering Paragraph No. 1 may file a joint report if a consensus is reached; if participants are unable to reach agreement, each individual participant or group of similarly minded participants may file a separate report. The workshop reports shall be filed by the following deadlines:

a. by 4 p.m., March 13, 2009, for the net metering technical conference in Docket R-09-1; and

b. by 4 p.m., March 27, 2008, the interconnection technical conference in Docket R-09-2.

DATED AND EFFECTIVE at Anchorage, Alaska, this 6th day of February, 2009.

BY DIRECTION OF THE COMMISSION

[36]Notice of participation must indicate whether the person will be appearing in person or telephonically and may be filed with the Commission or sent electronically by e-mail to James Keen at james.keen@alaska.gov or Rich Gazaway at richard.gazaway@alaska.gov.

Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501
(907) 276-6222; TTY (907) 276-4533